

The Applicants hereby affirm the election to prosecute on the merits claims 1-29 and 46-51 of the Group I inventions. Claims 30-45 have been canceled pursuant to this election, subject to a filing of one or more divisional patent applications at an appropriate future time.

Therefore, claims 1-29 and 46-51 are pending. Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by Hochstein (U.S. Patent 5,661,645). Claim 46 is rejected under 35 U.S.C. § 102(b) as being anticipated by Okuda (U.S. Patent 5,828,181). Claims 2, 3, 10, 29, and 51 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hochstein in view of Okuda. The Applicants respectfully traverse all of these rejections for the reasons set forth below.

Claims 4-28 and 47-50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. The Applicants would like to thank the Examiner for indicating that claims 4-28 and 47-50 would be allowable. Claims 4, 10-12, 19, 20, 22, 26, 47, 48, and 50 have been amended to become independent claims including all of the limitations of the base claim and any intervening claims. Therefore, these claims are now in condition for allowance. Claims 5-7 depend from claim 4. Claims 8 and 9 depend from claim 7. Claims 13, 16, and 17 depend from claim 12. Claims 14 and 15 depend from claim 13. Claim 18 depends from claim 17. Claim 21 depends from claim 11. Claim 23 depends from claim 22. Claims 24 and 25 depend from claim 10. Claim 27 depends from claim 26. Claim 28 depends from claim 14. Claim 49 depends from claim 48. Therefore, these claims are also in condition for allowance because each of them depends directly or indirectly from an allowable claim. Early allowance of these claims is respectfully requested.

Claim Rejection Under 35 U.S.C. § 102(b)

Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by Hochstein. The Applicants respectfully traverse this rejection because Hochstein does not disclose expressly or inherently each and every element of claim 1.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a *single* prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989) (emphasis added).

Hochstein discloses an array of LEDs. Hochstein's LEDs are inorganic semiconductor devices, not organic light emitting diodes, as recited in the present claim 1. A person having ordinary skill in the art understands that the term "LED" without a qualifier means inorganic semiconductor light emitting diode. See; e.g., *Lighting Handbook*, 9th edition, published by the Illuminating Engineering Society of North America (2000), pp. 6-65 to 6-67, a copy of which is attached. Furthermore, Hochstein discloses that an AC line voltage is converted to DC for powering the LEDs (column 1, lines 15-17; column 3, lines 27-32; and column 11, lines 4-47). Thus, the voltage impressed across the LED array is kept constant (not achievable by applying AC directly to the LED) (column 10, lines 58-59).

In contradistinction, claim 1 recites organic light emitting diodes that directly receive a voltage and current having waveform characteristic; i.e., varying voltage and current. Hochstein does not teach or disclose organic light emitting diodes or voltage and current having waveform characteristic.

Since Hochstein does not disclose each and every element of claim 1, Hochstein does not anticipate claim 1.

Claim 46 is rejected under 35 U.S.C. § 102(b) as being anticipated by Okuda.

"Anticipation requires the presence in a single prior art reference disclosure each and every element of the claimed invention, *arranged as in the claim*." "[T]he [Examiner] must identify the elements of the claims, determine their meaning in light of the specification and prosecution history, and identify corresponding elements

disclosed in the allegedly anticipating reference." *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984) (emphasis added).

Nowhere in Okuda's disclosure can one find a teaching of a plurality of organic light emitting diode modules arranged to spell out at least a letter or depict an image, as is recited in claim 46. Neither Figure 9 nor column 2, lines 1-45 of Okuda's disclosure, which the Examiner cited, discloses this limitation. Thus, the Examiner has failed to identify the elements in the reference that correspond to the limitations of the claim.

Since Okuda does not disclose each and every element of claim 46, Okuda does not anticipate this claim.

Claim Rejection Under 35 U.S.C. § 103(a)

Claims 2-3, 10, 29, and 51 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hochstein in view of Okuda. The Applicants respectfully traverse this rejection because a combination of Hochstein does not teach or suggest all of the elements of claims 2-3, 10, 29, and 51. The Applicants remark that claim 10 is allowable if rewritten in independent form. Therefore, the Applicants will treat the rejection as to claim 10 as the Examiner's oversight, and will not address the rejection as to this claim.

"To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." "All words in a claim must be considered in judging the patentability of that claim against the prior art." MPEP § 2143.03 (8th ed., Aug. 2001).

Neither Hochstein nor Okuda discloses or suggests an AC voltage having waveform characteristic applied directly to the light emitting modules, as is recited in claims 2-3 and 29. Specifically, Hochstein requires that AC voltage be converted to

DC voltage before applying to the LEDs. Okuda discloses that each light-emitting element has a rectifier connected in series, through which rectifier the voltage must be applied. Therefore, the voltage applied to the light-emitting element is no longer an AC voltage, as persons of ordinary skill in the art understand the term. Therefore, a combination of Hochstein and Okuda does not disclose or suggest an AC voltage having a waveform characteristic applied directly to the light emitting modules. Consequently, claims 2-3 and 29 are not rendered obvious by Hochstein in view of Okuda.

Regarding claim 51, neither Hochstein nor Okuda teaches, discloses, or suggests the arrangement of organic light emitting diode modules to spell out a letter or depict an image. Therefore, a combination of these two references still does not teach or suggest this limitation. Consequently, claim 51 is not rendered obvious by Hochstein in view of Okuda.

In view of the above, it is submitted that the claims are patentable and in condition for allowance. Reconsideration of the rejection is requested. Allowance of claims at an early date is solicited.

Respectfully submitted,



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ATTACHMENTVERSION OF CLAIMS WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) A light emitting device, comprising:

a plurality of organic light emitting diode (OLED) modules electrically connected in series; and

an alternating current (AC) power source electrically connected to and providing an AC voltage directly to the plurality of OLED modules, said voltage and said current having a waveform characteristic.

2. (Amended) A light emitting device, comprising:

a substrate; and

a plurality of organic light emitting diode (OLED) series groups provided on the substrate, each OLED series group comprising a plurality of OLED modules, the OLED modules of each OLED series group electrically connected in series, wherein the OLED modules emit light upon application of an AC voltage supplied directly thereto, and the AC voltage has a waveform characteristic.

4. (Amended) [The] A light emitting device [of claim 3], [further] comprising:

a substrate;

a plurality of organic light emitting diode (OLED) series groups provided on the substrate, each OLED series group comprising a plurality of OLED modules, the OLED modules of each OLED series group electrically connected in series; and

a converting circuit that converts an applied AC voltage with a sinusoidal waveform to a converted voltage waveform, and applies the converted voltage waveform to the at least one first and the second conducting lines;

wherein the OLED modules emit light upon application of an AC voltage, at least one first conducting line provided on the substrate, the at least one first conducting line electrically connected to a first end of each OLED series group, and a second conducting line provided on the substrate, the second conducting line electrically connected to a second end of each OLED series group opposite the first end.

10. (Amended) [The] A light emitting device [of claim 3], [further] comprising:

a substrate;

a plurality of organic light emitting diode (OLED) series groups provided on the substrate, each OLED series group comprising a plurality of OLED modules, the OLED modules of each OLED series group electrically connected in series; and

an alternating current (AC) power source, electrically connected to and providing an AC voltage to the first and second conducting lines;

wherein the OLED modules emit light upon application of an AC voltage, at least one first conducting line provided on the substrate, the at least one first conducting line electrically connected to a first end of each OLED series group, and a second conducting line provided on the substrate, the second conducting line electrically connected to a second end of each OLED series group opposite the first end.

11. (Amended) [The] A light emitting device [of claim 3], [wherein] comprising:

a substrate; and

a plurality of organic light emitting diode (OLED) series groups provided on the substrate, each OLED series group comprising a plurality of OLED modules, the

OLED modules of each OLED series group electrically connected in series, and the plurality of OLED series groups [are] arranged in rows of OLED modules;

wherein the OLED modules emit light upon application of an AC voltage, at least one first conducting line provided on the substrate, the at least one first conducting line electrically connected to a first end of each OLED series group, and a second conducting line provided on the substrate, the second conducting line electrically connected to a second end of each OLED series group opposite the first end.

12. (Amended) [The] A light emitting device [of claim 3], comprising:

a substrate;

a plurality of organic light emitting diode (OLED) series groups provided on the substrate, each OLED series group comprising a plurality of OLED modules, the OLED modules of each OLED series group electrically connected in series;

wherein each OLED module comprises a respective anode and cathode, the OLED modules of each OLED series group are serially connected anode to cathode, the OLED modules emit light upon application of an AC voltage, at least one first conducting line provided on the substrate, the at least one first conducting line electrically connected to a first end of each OLED series group, and a second conducting line provided on the substrate, the second conducting line electrically connected to a second end of each OLED series group opposite the first end.

19. (Amended) [The] A light emitting device [of claim 3], [wherein] comprising:

a substrate; and

a plurality of organic light emitting diode (OLED) series groups provided on the substrate, each OLED series group comprising a plurality of OLED modules, the